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INTRODUCTION TO EDUCATIONAL PSYCHOLOGY

INTRODUCTION TO EDUCATIONAL PSYCHOLOGY

A MANUAL FOR AN INTRODUCTORY COURSE

BY

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PREFACE

This book is the outgrowth of the author's experience in teaching educational psychology during the past seven years. It is an attempt to present in outline form the leading facts and problems of educational psychology that are of vital importance in teaching. The material is chosen and organized from the point of view of the student who is just beginning to prepare for teaching as a profession. This means that the facts and principles are presented in terms of the classroom experience of the teacher in the public schools.

This work is planned so that it may be used either as a syllabus in connection with any elementary textbook in educational psychology or as an outline of the course in place of a text.

The references for reading are given at the beginning of each chapter. In general, these references include the standard works that give the most adequate treatment of the topics under discussion. Preference is given to the newer books that are generally available in the libraries of colleges and normal schools. The lists of readings are by no means complete, but should be supplemented by other references that the teacher may recommend. The author has been governed in his choice by the library facilities available to his own classes. It is not expected that every student read all the references, but that all the students will read some of them.

Following the outline of each chapter there is a group of problems. These problems are a necessary part of the work of the student. They are chosen to illustrate the principles set forth in the chapter and to supplement and complete the development of many of the topics suggested in the outline. No chapter is complete without a full discussion of the problems.

The author suggests that the students keep their notes on the classroom discussions on the blank pages provided; but write out their discussions of the problems and hand them in to their instructor for careful criticism.

The author wishes to express his indebtedness to the many writers in the field of psychology, especially those whose works are included in the reference lists. He is especially indebted to Professors W. H. Pyle and E. L. Thorndike for information and inspiration.

HOWARD TAYLOR.

OKLAHOMA COLLEGE FOR WOMEN,
CHICKASHA, OKLAHOMA,
November, 1924.

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INTRODUCTION TO EDUCATIONAL PSYCHOLOGY

A Manual for an Introductory Course

I

EDUCATION AND PSYCHOLOGY

Reading References

Angell, J. R.: Psychology, Chapter I.
Cameron, E. H.: Psychology and the School, Chapter I.
Gordon, K.: Educational Psychology, Chapter I.
Pyle, W. H.: The Outlines of Educational Psychology, Chapter I.
Pillsbury, W. B.: Fundamentals of Psychology, Chapter I.
Rowe, S. H.: Habit Formation and the Science of Teaching, Chapter I.
Starch, D.: Educational Psychology, Chapter I.
Warren, H. C.: Elements of Human Psychology, Chapter I.
Watson, J. B.: Psychology from the Standpoint of a Behaviorist, Chapter I.
Woodworth, R. S.: Psychology, Chapter I.

1. The two persistent problems in education are: (1) What to teach; and (2) How to teach.

(*a*) In different periods of history the emphasis has been first upon one and then upon the other of these problems.

(*b*) A science of education must put proper emphasis upon both problems.

2. Education is the process of improving responses to given situations.

(*a*) This process involves working changes in the nervous system.

(*b*) "Improvement" from the biological point of view means greater speed, accuracy, and ease in the response. From the social viewpoint it means changing the response so that it is in harmony with social ideals.

3. Psychology has been defined in many ways. The following definitions are representative of the leading points of view that have been held by psychologists: (1) Psychology is the science of the soul; (2) Psychology is the science of the mind; (3) Psychology is the science of consciousness; (4) Psychology is the science of behavior; (5) Psychology is the science of consciousness and behavior.

(*a*) It furnishes the facts about the nature of children and the principles governing the learning process which are essential to education.

(*b*) The solution of the problem of how to teach is dependent upon a knowledge of the learning process. Teaching is helping the pupil to appreciate and control the values of life.

4. Educational psychology is that branch of psychology which undertakes to organize and explain the factors involved in learning and to apply them to education.

(*a*) It is not within the scope of educational psychology to determine what to teach. This problem can be solved only through a knowledge of the ideals and purposes of society as revealed by a study of the social sciences.

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(*b*) Educational psychology undertakes to lay the foundation for the solution of the problem of how to teach.

PROBLEMS

1. As a high school student, for which did you feel the greater need: better teaching or better subject-matter?

2. On what basis do you judge the value of the content of your high school course?

3. Name six things that you do frequently in which you see a need of improvement.

4. Compare the improvement in doing things you have learned in school with the improvement in things learned out of school. For example, playing tennis with working algebra problems.

5. Criticise each of the definitions of Psychology given above.

6. Name four things you expect to get from the study of Educational Psychology that will help you as a teacher.

7. How can a teacher know what responses should be developed?

8. Name five instances in which improvement depends on breaking down responses instead of developing them.

II

MENTAL AND PHYSICAL DEVELOPMENT

Reading References

Angell, J. R.: Chapters from Modern Psychology, pp. 45–71.
Ayres, M., J. F. Williams, and T. D. Wood: Healthful Schools, Chapter XI.
Dewey, John: Democracy and Education, Chapter IV.
Dutton, S. T.: Social Phases of Education, pp. 121–140.
Dresslar, F. B.: School Hygiene, Chapter I.
Gordon, K.: Educational Psychology, Chapter II.
Griffith, C. R.: General Introduction to Psychology, Chapters III and IV.
Hall, G. S.: Adolescence, Chapter III.
Osborne, H. F.: The Origin and Evolution of Life, Introduction.
Pyle, W. H.: The Outlines of Educational Psychology, Chapter II.
Seashore, C. E.: Introduction to Psychology, Chapter XIV.
Tyler, J. M.: Growth and Education, Chapter II.
Whipple, G. M.: Manual of Mental and Physical Tests, Part I, Chapters I, II, III.

1. Development is one of the fundamental ideas that govern modern thinking.

(*a*) In the field of science this is expressed in the doctrine of evolution.

(*b*) In common, every-day, experience this idea is expressed by such terms as "progress" and "growth."

(*c*) All sciences have become dynamic, growing sciences. They are no longer concerned chiefly with the discovery and classification of facts; but seek to discover

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the laws and principles that explain tendencies and movements and the forces that are working in the world.

(*d*) Education is essentially a process of growing.

2. Mental development is dependent upon physical development.

(*a*) The most important relationship between the mind and the body is that between the mind and the nervous system.

(*b*) In general the more complex the nervous system is, the greater the possibility of mental growth.

3. The term "mind" is here used as meaning the functioning of the nervous system which involves or may involve cerebral activity.

(*a*) This relationship of mind to brain is analogous to the relation between a moving object and its motion, or to the relation between a bar of iron and its weight.

(*b*) The separation of mind and brain is an abstraction. That is, you may think of them as being separate, but you cannot actually separate them.

4. The mind is the sum total of one's conscious experiences, both actual and potential.

(*a*) The actual conscious experiences are those of which one is aware at any given time.

(*b*) The potential conscious experiences are those that may be "called to mind" through the association of ideas and memory. For example, two people may be asked the significance of the year 1763. One may at once have come into consciousness ideas about the close of the Seven Years' War, while the other one, being wholly ignorant of history, would have no such ideas. These ideas were a part of the mind of the first person, even before they were brought back into consciousness. They were not a part of the mind of the person who knew no history.

5. The development of the mind is dependent directly upon the development of the brain.

(*a*) The brain can have full normal development only through the normal development of the whole body.

(*b*) The development and functioning of the sense organs is of special importance to brain development.

(*c*) All knowledge of the world comes through the sense organs. Without the senses there is no sense.

6. The importance for education of a sound body should be fully appreciated by every teacher.

(*a*) Good light, heat, ventilation, and comfortable seats are as valuable as good teachers, good books, and good apparatus.

(*b*) The teacher should appreciate the importance of detecting and correcting defective vision, hearing, and other sensory and physical defects.

(*c*) A teacher should know the value of good general health and how to develop it.

PROBLEMS

1. If physical development is a condition of mental development how can you explain the fact that many people with weak and deformed bodies have great minds?

2. How do you account for the fact that many good athletes are very poor students?

3. What pupils should have the most physical training?

4. How can a person born blind learn about color? How does his knowledge of color differ from that of people with normal vision?

5. If a person could not see, hear, taste, smell, or feel, how could he learn anything?

6. How do you get ideas of such things as goodness, honor, or space?

7. How do the motor and association centers of the brain aid in learning?

8. If a child needs eye-glasses and his parents refuse to buy them, what should the teacher do about it?

9. If the state compels a child to attend school should it also compel parents to have a child's adenoids and defective tonsils removed when advised by a competent physician?

10. If the state furnishes free textbooks, should it also furnish free food?

11. Try to formulate a principle to guide in deciding just how far the state can justly go in assuring good physical development to every child.

12. Try to find out what physical defects you have that interfere with your mental development.

Teacher's Notes

III

MENTAL DEVELOPMENT AND THE PERIOD OF INFANCY

Reading References

Allport, F. H.: Social Psychology, Chapters II and III.
Bolton, F. E.: Principles of Education, Chapter I.
Butler, N. M.: The Meaning of Education, Chapter I.
Cameron, E. H.: Psychology and the School, Chapter II.
Edman, I.: Human Traits and Their Social Significance, Chapter I.
Fiske, J.: The Destiny of Man, Chapters IV and V.
Griffith, C. R.: General Introduction to Psychology, Chapter V.
Judd, C. H.: Psychology, Chapters II and III.
Norsworthy, N. and M. T. Whitley: The Psychology of Childhood, Chapter XI.
Thorndike, E. L.: Educational Psychology, Briefer Course, Chapter VII.
Starch, D.: Educational Psychology, Chapter II.
Warren, H. C.: Elements of Human Psychology, Chapters II and III.
Watson, J. B.: Psychology from the Standpoint of a Behaviorist, Chapter III.

1. The possibility of development depends on a condition of incompleteness or immaturity.

(*a*) As a condition of growth, immaturity is a positive factor of great value.

(*b*) A normal child is immature not because he lacks something, but because of the plastic condition of the nervous system.

2. Plasticity is the outstanding characteristic of the period of infancy.

(*a*) Plasticity is that quality of the nervous system of a child which makes it yield to stimuli, but not yield all at once.

(*b*) One may continue to learn so long as his nervous system is plastic, but learning becomes more difficult after the age of 25 or 30. But the period of learning is much longer than commonly supposed.

3. In terms of plasticity there are three types of responses.

(*a*) To a given stimulus the organism may react with a ready-made, well-organized response. For example: A chick will peck at a little red bug with a high degree of accuracy the first time it makes the attempt. In this case the chick is not plastic. It yields to the stimulus, but yields at once.

(*b*) To a given stimulus an organism may at first react with an unorganized, and indefinite, response, which gradually becomes organized and definite through repetition. A baby six months old may respond to the stimulus "a little red bug" in a great many ways. He may cry, or reach for the bug, or mash it with his hand, or put it in his mouth. After years he may learn to respond to the "little red bug" by calling to mind a large group of biological facts about the bug. The nervous system of the child is plastic. He responds to the stimulus, but at first, in an indefinite, unorganized way. Gradually the response becomes organized and definite.

(*c*) To a given stimulus an organism may react with a wholly random and irrelevant response which does not improve with practice. For example, to the stimulus "$(X + Y)^2 =$ " a dog may respond with barking or scratching, or running to and fro, but it will never respond with any movements involving a knowledge of the expansion of a binomial. The dog is not plastic as regards learning algebra.

4. The physical basis of plasticity is a nervous system with relatively few ready-made connections, but with a great number of possible connections.

(*a*) The lower animals have relatively a greater number of inherited, well-organized connections but fewer possible connections than the human infant.

(*b*) The superiority of the human infant in the number of potential connections in his nervous system accounts for his greater ability to learn.

(*c*) The apparent helplessness of the human infant is in fact his greatest source of power for learning.

(*d*) Other things being equal, the longer the period of infancy the greater the native intelligence.

PROBLEMS

1. Why is it necessary for a person to begin to study music early in life in order to become highly skilled as a musician?

2. The adult idiot has about the same intelligence as the normal three-year old child. Explain the difference between the arrested development of idiot and the immaturity of the child.

3. Should education undertake to prolong the plastic period?

4. If a child walks and talks at an unusually early age, is it evidence of superior intelligence?

5. In solving a mechanical puzzle two children made the following records: Child A: 1st. trial, 10 minutes; 2nd. trial 7 minutes; 3rd. trial, 8 minutes; Child B: 1st. trial, 20 minutes; 2nd. trial, 9 minutes; 3rd. trial, 2 minutes. Which child was the more plastic? Why?

6. Suggest some qualities of the nervous system other than plasticity that are important in learning.

7. Is slowness in learning evidence of plasticity?

8. What is the relation of plasticity to speed in learning?

9. Does an infant dog learn faster than a human infant?

10. Why does learning become slower with increase in age?

IV

ORIGINAL NATURE

Reading References

Bateson, W.: Mendel's Principles of Heredity, Chapters I and XII.
Castle, W. E. and J. M. Coulter, and Others: Heredity and Eugenics, Chapters II, IV, VIII.
Davenport, C.: Heredity in Relation to Eugenics, Chapter VI.
Edman, I.: Human Traits and Their Social Significance, Chapter VII.
Gates, A. I.: Psychology for Students of Education, Chapter VI.
Goddard, H. H.: The Kallikak Family, Chapters II and III.
Goddard, H. H.: Feeble-mindedness; Its Causes and Consequences, Chapters IV, VI, VII, VIII.
Griffith, C. R.: General Introduction to Psychology, Chapter VI.
Norsworthy, N. and M. T. Whitley: The Psychology of Childhood, Chapter I.
Pyle, W. H.: The Outlines of Educational Psychology, Chapter III.
Thomson, J. A.: Heredity, Chapter VI.
Thorndike, E. L.: Educational Psychology, Briefer Course, Chapters V and VI.
Starch, D.: Educational Psychology, Chapters III, VI

1. Heredity is the source of original nature.

(*a*) Heredity involves resemblances to lines of descent rather than mere resemblance to immediate parents.

(*b*) The fundamental statement of the mechanism of heredity is Mendel's law of the pure transmission of unit characters.

(*c*) Galton's law states the fact that there is a tendency to mediocrity; that is, a tendency to approach a type.

(*d*) Mental heredity is a term applied to the resemblance of the mental traits of the offspring to his ancestry. In so far as it applies strictly to heredity it means nothing more than the physical inheritance of the nervous system and certain glands that affect consciousness.

(*e*) Social heredity is, strictly speaking, not heredity at all.

2. There are three general classes of original responses.

(*a*) Reflexes are the least complex in nervous structure and the most definite in response of the original tendencies. They are little affected by education. For example: sneezing, coughing, batting the eye-lid.

(*b*) Instincts are more complex in nervous structure than the reflexes and less definite in response. They may be greatly modified by education, but rarely inhibited entirely. For example: fighting, mating, parental behavior.

(*c*) Original abilities are the most complex in nervous structure and least definite in response of the original tendencies. They are so greatly affected by education that they may never function without training. For example: the ability to talk, or to learn mathematics, or play a violin, or write poetry.

3. There can be no clear and definite separation of these three classes of original responses.

(*a*) The early influence of learning makes it difficult to classify a particular response. For example: eating.

(*b*) Only the more decidedly different responses can be unmistakably distinguished, as sneezing and fighting, or fighting and writing poetry.

(*c*) The classification is helpful in that it throws light on the nature of the original tendencies.

4. Education cannot be successful without taking into account certain facts learned from the study of heredity.

(*a*) Human beings are more alike than they are different. This is the basis of successful class organization and teaching.

(*b*) Small individual differences are of great importance. Social progress depends largely upon the way in which children of slightly inferior or superior original ability are treated in school.

(*c*) Education can never make a genius out of a born imbecile, but it may save him from becoming a social delinquent. On the other hand the born genius may be crushed into mediocrity by wrong education.

(*d*) Three things education must do: (1) Save as many as possible of the subnormal from becoming social burdens; (2) Give normal children the opportunity for natural and healthy development; (3) Give the superior child opportunity to develop to his full ability.

5. The question of the elimination of the physically and mentally unfit is not within the scope of psychology.

(*a*) This question must be decided in the field of social science.

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(*b*) There is much useful work that can be done by people of low-grade intelligence, who will do it more cheerfully and happily than those of normal intelligence. For example: cleaning streets, or hauling garbage.

(*c*) The contribution to society of some one who is physically defective may be greater than that of thousands of physically normal individuals. For example: one hunchback may give to the world more than all the pugilists of his generation.

PROBLEMS

1. Make a list of the facts about the heredity of a child that would be helpful to his teacher.

2. Try to work out a practical plan for getting such information.

3. Point out the difficulties of making use of a knowledge of the laws of heredity in actual teaching.

4. Name examples of the inheritance of traits or physical characteristics that have a bearing on the education of the persons concerned.

5. Which individual is better fitted for parent-hood, the one who is physically defective but of superior intelligence, or the one physically normal but of low normal intelligence?

6. If a boy who has strong interest in medicine belongs to a family that has produced many successful lawyers, should he be advised to study law or medicine? Why?

7. In what respects do boys and girls differ in original nature because of sex difference?

8. Is co-education wise? At what ages? Why?

9. On a basis of what you have learned from your reading name the criteria by which to determine if a tendency to act is original or not.

10. Point out the practical difficulties involved in trying to distinguish between nature and nurture.

V

INSTINCTIVE AND EMOTIONAL BEHAVIOR

Reading References

Allport, F. H.: Social Psychology, Chapters III, IV.
Bennett, H. E.: Psychology and Self-Development, Chapter XVI.
Gates, A. I.: Psychology for Students of Education, Chapters VI, VIII.
Gordon, K.: Educational Psychology, Chapters III, IV.
James, W.: Principles of Psychology, Vol. II, Chapters XXIV, XXV.
McDougall, W.: Outline of Psychology, Chapters V, XI.
Norsworthy, N. and M. T. Whitley: Psychology of Childhood, Chapters II, V.
Pillsbury, W. B.: The Fundamentals of Psychology, Chapters VII, XVI.
Pyle, W. H.: The Outlines of Educational Psychology, Chapter IV.
Seashore, C. E.: Introduction to Psychology, Chapters XII, XV, XXI.
Starch, D.: Educational Psychology, Chapter II.
Thorndike, E. L.: Educational Psychology, Briefer Course, Chapters II, III, IV, VII.
Warren, H. C.: Elements of Human Psychology, Chapters IX, X.
Watson, John B.: Psychology from the Standpoint of a Behaviorist, Chapters V, VI, VII.
Woodworth, R. S.: Psychology, Chapters VI, VII.

1. The term "instinctive behavior" is used to describe all the relatively definite and complex forms of inherited response to definite stimuli.

(*a*) Instincts are so easily modified by training that it is difficult to define them in unmistakable terms.

(*b*) The differences among investigators and writers in the enumeration and classification of instincts grow out of this fact that instincts are so greatly affected by training.

(*c*) A good working definition is: an instinct is a relatively definite and complex inherited response to a definite stimulus.

2. Instincts are transitory.

(*a*) Instincts are dependent upon the physical structure of the organism.

(*b*) They are, therefore, all potentially present in the germ plasm.

(*c*) They gradually develop, function for a time with maximum activity, then gradually decline.

(*d*) Some instincts, such as suckling, have reached a high plane of activity at birth. They are the dominant activities of early infancy, but gradually become overshadowed in importance by other instincts that develop more slowly. However, they persist, though less active, even through old age.

3. Instincts are said to be periodic.

(*a*) Many instincts, as mating or migration, are seasonal. They wax and wane and wax again in activity.

(*b*) This general fact of periodicity is better explained as recurring changes in the stimulus, frequently involving internal bodily changes as well as external environmental changes, than by assuming that the response itself is periodic.

Teacher's Notes

4. Instincts tend to become specialized.

(*a*) When the organism reaches the stage of development in which a given instinct is ready to function, it may be called into activity by any one of a number of similar stimuli; but having been the response to one particular stimulus it is more likely to follow that stimulus the second time than any other, provided the result is satisfying.

(*b*) In some cases, after an instinctive response has been evoked repeatedly by one particular stimulus, it can then be evoked by no other stimulus. For example: a chick following a particular moving object; or a baby nursing a particular type of bottle; or mating among birds and, less pronounced, mating among human beings.

5. Fundamentally, emotional behavior is a type of inherited response.

(*a*) Emotions are so easily modified by training that it is often difficult to discover the purely inherited elements in emotional response.

(*b*) While instincts are essentially the functioning of definite organized connections in the nervous system, emotions are the expression of conflicts in tendencies to respond, due to lack of definite organization in the nervous system.

(*c*) If the conflicts in tendencies to respond can be removed by the development of a definite reorganization of the nervous system, the emotion vanishes.

6. The nature of the emotion depends upon the nature of the tendencies to act that are in conflict.

(*a*) If the instinctive fighting responses are in conflict, the emotion that arises is anger. The successful fighter with a well-organized attack, who is not checked by his opponent does not become angry. The affective tone of his activity is highly pleasurable.

(*b*) If the instinctive protective responses, such as crouching, hiding, running to cover, watching the exciting object, are in conflict, then the emotion that arises is fear. A person running from a mad dog not only runs instinctively, but instinctively turns back to watch the dog. When these two tendencies come into play at the same time a "wave of fear" sweeps over the person.

(*c*) All other emotions, as remorse, joy, pity, are due to conflicts in definite groups of tendencies to act.

(*d*) Emotions are quite distinct from the normal satisfying affective tone of instinctive behavior. Emotions are essentially annoying in affective tone. This is true to a marked degree if the emotional condition is prolonged.

7. The teacher should have a clear understanding of the nature of instinctive and emotional behavior.

(*a*) The teacher should know the dominant instincts in the different periods of a child's life.

(*b*) The teacher should take into account the effect of seasonal changes on instinctive behavior.

(*c*) The teacher should fully appreciate the tremendous force of instincts and seek to direct rather than inhibit them.

(*d*) The teacher should try to help the child to develop organized responses to take the place of the ineffective and frequently harmful responses so characteristic of emotions.

PROBLEMS

1. Make a list of instinctive acts you perform frequently and point out in what respect these acts are modified by training.

2. Write down as many different definitions of instinct as you can find and try to classify them.

3. It is said that if an instinct is inhibited at the time most favorable for its functioning that it will reappear later in a perverted form. Collect evidence to prove or disprove this statement.

4. Explain what is meant by saying instincts are transitory. Then show how these facts should be used in teaching.

5. Suggest four ways in which periodic instincts could be used effectively in school work.

6. How do you account for the fact that certain games are more prevalent at one time of the year than another? For example, playing marbles, spinning tops, baseball.

7. What is the educational problem that grows out of the fact that instincts tend to become specialized?

8. Point out the limitations of the recapitulation theory as a guide to the teacher in dealing with the instinctive development of a child.

9. Two years of foreign language are required for graduation in a certain college. One girl, who is anxious to graduate has such difficulty with second year Spanish that she is frequently overcome with fear, suffering from trembling, shortness of breath and violent crying. How should this student be treated?

10. A little girl of four is very nervous. She is moved to tears by the slightest interference with her plans. This usually brings on a fit of anger with more crying. How should she be treated?

11. How would you deal with a child who is afraid of the dark? One who is afraid of water? One who is afraid of thunderstorms?

VI

NON-SOCIAL INSTINCTS

Reading References

Averill, L. A.: Elements of Educational Psychology, Lesson 1.
Bolton, F. E.: Principles of Education, Chapter VIII.
Cameron, E. H.: Psychology and the School, Chapter III.
Kirkpatrick, E. A.: Genetic Psychology, Chapter IV.
O'Shea, M. V.: Social Development and Education, Chapters VII, VIII.
Norsworthy, N. and M. T. Whitley: Psychology of Childhood, Chapter III.
Pyle, W. H.: The Outlines of Educational Psychology, Chapter V.
Thorndike, E. L.: Educational Psychology, Vol. I, Chapter VI.
Woodworth, R. S.: Psychology, pp. 137–145.

1. The non-social instincts may be described as those which function to adjust the individual to his environment without reference to the welfare of others or his dependence upon them.

(*a*) Some non-social instincts are responses primarily to the physical environment. For example, food-getting.

(*b*) Other non-social instincts are responses to other individuals, but do not function for the welfare of others. For example, teasing.

(*c*) The non-social instincts of special importance to education are: (1) migration, (2) collecting, (3) fighting.

2. Migration is the tendency to respond to an annoying environment by moving out of it.

(*a*) This tendency is relatively stronger in boys than in girls. Girls endure irksome physical and social conditions that drive boys out. Runaways and truants are much more frequently boys than girls.

(*b*) The school environment is more likely to be annoying and evoke the "moving out" response in the case of the dull, backward, and physically under-developed children than in the case of normal children.

(*c*) Migration in the form of truancy is due largely to dislike of school and to a desire to be out of doors. Dislike of school is due to inability to do the work and the desire for out of doors is fundamentally a need for more fresh air for under-developed lungs. Truants are generally under-sized and with low vital index.

(*d*) The school work should be within the ability of the pupil and related to his interests. Adequate physical training and occasional trips taking the school out of the building will do more to overcome truancy than a truant officer.

3. Collecting is the tendency to respond to attractive objects by gathering them together and hoarding them.

(*a*) This instinct is probably related to food-getting. In lower animals and sometimes in man it becomes specialized as regards food.

(*b*) Collecting is almost a universal instinct. Few people have not made one or more collections. Amassing fortunes, filling museums, collecting libraries are common expressions of this instinct; but it may become specialized as regards almost anything. Birds' eggs, stamps, tobacco tags, marbles, paper-dolls are but a few of the numberless things that children and adults collect.

(*c*) The school should make great use of the collecting instinct.

4. Fighting is essentially an instinctive tendency to respond to interference or opposition with resistance.

(*a*) Historically, this instinct has played a great part in the development of civilization.

(*b*) The fact that the emotion of anger so generally accompanies the fighting instinct makes it difficult to distinguish the two types of behavior. Both are accompanied by, or involve as part of them, certain marked bodily changes, such as increase in the activity of certain glands, rapid breathing, increased circulation of the blood, a general tenseness of the muscles.

(*c*) Successful fighting tends to dissipate anger. Fighting without anger is usually more effective than with it, but there is frequently a feeling that the opposite is true.

(*d*) The fighting instinct can and should be directed along social rather than anti-social lines. Children should be trained to fight for the rights of others rather than for their own; to fight with ideas rather than with fists and weapons.

(*e*) The fighting instinct may be used wisely in school work in connection with athletics, debating, competition for good scholastic records.

PROBLEMS

1. Truancy is more common in the spring than in the fall and winter. What is the explanation for this and what should be done about it?

2. In some schools the children are frequently taken on trips to local places of interest, such as the city light plant, water-works, or flour mill. Some people think this is a waste of time and a detriment to the work of the school. Gather evidence on this point and state what conclusion you reach.

3. A certain thirteen year old boy in the fifth grade is dull in his school work, smaller than the average boys of his age, relatively inactive on the playground. He frequently plays truant and spends his time loafing around a radio shop. What should be done in his case?

4. In a certain consolidated school the children have been working for three years on collecting specimens of the plant and animal life of the community for a school museum. All available space is now taken. Suggest a plan for further use of the collecting instinct.

5. Work out a practical plan for the use of the collecting instinct in the grade school which you attended.

6. A certain boy habitually teased and bullied the smaller boys. One day, at the suggestion of one of the older boys, three of the little fellows made a surprise attack on the bully and whipped him. Fighting was against the rules of the school. How should the case have been handled by the principal?

7. What should be the attitude of the school towards fighting? Why?

8. Suggest four activities that would give adequate direction to the fighting instinct that would not encourage physical combat.

9. Can the fighting instinct be developed through education in harmony with the principle of returning good for evil? How?

10. A certain high school is notoriously unfair in all athletic contests. How should the evil be corrected?

VII

SOCIAL INSTINCTS

Reading References

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1. The social instincts may be described as those which function to adjust the individual to other human beings and to promote harmonious group life.

(*a*) These instincts begin to function very early in life. Babies are instinctively attracted towards each other.

(*b*) The growth of the individual from infancy through childhood and adolescence into adult life is marked by changes in the manifestations of the social instincts.

(*c*) The social instincts are the dominant original tendencies in the period of adolescence.

(*d*) The social instincts of special importance in education are (1) gregariousness, (2) kindliness, (3) display, and (4) the mating instinct.

2. Gregariousness is the tendency to seek the companionship of one's own kind.

(*a*) The earliest manifestation of this instinct is satisfaction shown by babies at the presence of other human beings, especially little children or other babies. As early as the fifth or sixth year this instinct may become specialized into chumming.

(*b*) The gang is the usual expression of this instinct in the pre-adolescent and early adolescent years. The gang may be good or bad. The solution of the problem is in sympathetic direction, as exemplified by the Boy Scout Movement.

(*c*) A common and pernicious form of ganging is the high school, secret social fraternity. Other student organizations, such as athletic teams and debating clubs should be encouraged. The evils inherent in high school fraternities need not be a part of the college fraternity. Under proper control, the college fraternity is a valuable social force.

(*d*) The school cannot ignore or neglect gregariousness. This tendency should be turned to good account in social and intellectual training.

3. Kindliness is closely related to the tendency to be satisfied with the companionship of one's own kind.

(*a*) Kindliness and the emotion of sympathy are the basis of good will.

(*b*) Education should give full and adequate encouragement to the development of this tendency.

4. Display is a tendency to seek the approval of one's fellows by "showing off."

(*a*) The tendency to display frequently functions in connection with rivalry and the sex instinct.

(*b*) Display is so closely related to fighting that it very readily takes non-social forms of expression.

(*c*) In general the school should inhibit this tendency or direct it along lines of group activity. If properly directed it may serve as a powerful motive in education.

5. The mating instinct is the original tendency to mate with one of the opposite sex.

(*a*) This tendency frequently appears in a rudimentary form in children not older than nine or ten years.

(*b*) This instinct is the biological foundation of the family.

(*c*) Every child should have wholesome and sympathetic teaching by mother or father concerning the development and function of this instinct.

(*d*) Adolescence is the crucial period in the development of this instinct. This is the time when parents and teachers should see that the instinct is directed along normal and sane channels.

(*e*) Sex hygiene, including its mental aspects, should be part of the work of the school in the higher grammar grades and in the high school.

PROBLEMS

1. Two boys, age 14 years, have chummed together for six years, one is large, easy-going, and slow of speech and action. The other is small, quick-witted and very active. The smaller boy has always been domineering over the other. Will either boy be injured by this association? Which one? Why? What should be done about it?

2. A gang of boys about 12 years of age is engaged in stealing and other serious offenses. How should these boys be treated. What can the school do for them?

3. In a certain high school there are several social fraternities. They rent club rooms and have expensive and elaborate social functions. Parents are unable to control the situation and hold the high school principal responsible. How should he deal with the problem?

4. There is a certain boy who spends his leisure time largely in reading. He cares little for play with other boys. They call him Sister. What can be done to help this boy?

5. In connection with a class in citizenship in the eighth grade a group of children want to organize a club for social service of some kind. Outline the activities such a club can carry on with interest and profit.

6. Work out a plan for developing co-operation and helpfulness in connection with the teaching of geography in the sixth grade.

7. A certain boy has a marked tendency to do things to attract attention to himself in class, and in athletics. What can the teachers do to help him overcome this over-developed tendency to display?

8. In a certain high school discipline is very poor. It has been suggested that student government be tried. Is it likely to succeed? Why?

9. Work out a plan for the effective and proper use of the desire for approval in connection with some school activity.

10. A certain high school girl is what is commonly called "boy crazy." How can she be helped?

11. Is co-education wise in the adolescent period? Why?

VIII

PLAY AND EDUCATION

Reading References

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Woodworth, R. S.: Psychology, pp. 485–499.

1. Many theories have been developed to explain play. Chief among these are the following:

(*a*) The recapitulation theory of play explains play as the rehearsal in childhood of the past activities of the race. Children play with bows and arrows because their ancestors once used bows and arrows. Those who hold to this theory do not explain why the play of childhood rehearses the adult activities of the race

rather than the activities of children of past generations. This theory is related to the "culture epoch theory" which is equally unsound.

(*b*) The practice theory of play looks forward rather than backward. It explains play as being an instinctive form of activity of childhood, the function of which is to prepare the child for the serious business of adult life. Little girls play with dolls to prepare for motherhood, for example. Whatever truth there is in this theory is better explained as imitation.

(*c*) The excess energy theory explains play as being random movements and activities that serve as a means of expressing excess energy of childhood. The criticism of this theory is that there is no excess energy. A child needs all the energy he has for normal growth.

(*d*) The recreation theory explains play as being an inherited means of recreation. It is based upon the false assumption that change of activity is rest. The fact is it is simply a process of getting tired in another place.

(*e*) The biological theory explains play as being the physical expression of the developing and functioning instincts. This theory is in harmony with all the known facts and is not open to the adverse criticism that may be brought against the other theories.

2. The nature of play is so generally misunderstood that it is of great importance that teachers know the following fundamental facts concerning play.

(*a*) The outstanding characteristic of all play activities is that they are pleasurable. In general, any activity

that is a normal expression of an instinct is satisfying in affective tone. Supervision frequently crushes out this spontaneous, instinctive, pleasurableness of play activities.

(*b*) Play and work are not opposite terms. Work is a term borrowed from physics or economics; but it is not a psychological term. Play and drudgery are psychologically opposite terms. Digging a ditch may be both work and play to one person and work and drudgery to another.

(*c*) Play is not necessarily economically useless activity. There may be more genuine play spirit in the activities of a high-salaried professional baseball player than in those of a boy compelled to take part in a baseball game in which he has no interest.

(*d*) Play is not necessarily an activity that is an end in itself. The deciding game of baseball in the world series is no less play because its outcome means more than a thousand dollars to each of the players, in addition to the mere winning or losing of the game.

(*e*) Play is not an instinct, but any activity which gives normal, adequate expression to a functioning instinct is pleasurable and is essentially play. This is equally true of the mud-pie making of early childhood and the money-making of late adulthood.

3. The development of play parallels the mental and physical growth of the child.

(*a*) More than one-third of the brain has motor functions. Early childhood is a period of rapid brain growth. As a consequence play takes the form of strenuous physical activity.

(*b*) As the instincts develop and change in their relative importance, play changes in form. The games of childhood are essentially individualistic, such as tag, prisoner's base, hare and hounds, tops, and marbles. Those of adolescence are co-operative team games, such as baseball, football, and basket-ball. But since the non-social instincts are still active, they frequently manifest themselves in the tendency to sacrifice team play for individual glory.

(*c*) The play of adults is less active than that of youth. There is a tendency for adults to confine play to the serious business of life. As a consequence they fail to escape their burdens and responsibilities and fail to get needed exercise and mental relaxation. Bridge whist, chess, and golf are typical play activities of mature adulthood.

4. Play, properly used, is one of the most valuable factors in education.

(*a*) Since play is the expression of the instincts it furnishes one of the most powerful motives for learning available. School work that is done as play is usually done well and the learning highly effective.

(*b*) There is no form of activity that affords so good an opportunity for moral training as play. Fair play and good sportsmanship are the very foundation ideals of character. To "die game" is the ideal of the savage and the martyred saint alike. No other activity develops this quality of character to such a degree as clean sport.

(*c*) Play brings out the best and worst. It reveals to the observing teacher not only the moral and spiritual needs of the child, but also sources of power that may be used in his development.

(*d*) That education is most effective that involves doing. There are many forms of play that afford excellent opportunities for putting into action the things learned in school.

(*e*) A properly developed spirit of play will function throughout life. It is not necessarily dangerous to look upon life as a game. The best work of the world is done by men and women who find joy in "playing the game" hard. The spirit of play is more valuable in education than either a mere sense of duty or discipline. The spirit of play is the spirit of eternal youth; grown-ups should never "grow up"—completely.

PROBLEMS

1. Which of the theories of play best accounts for your own play? Explain why you think so.

2. A certain ten-year old boy, who was a member of a boys' recreation club, seemed to enjoy being with the other boys, but he was unable to play any game well. As a consequence, he was frequently left out of the play by the others. He was an only child, somewhat spoiled, and inclined to be a "sissy." What could have been done to help this boy?

3. A certain boy, who was a good baseball pitcher, almost invariably lost his temper and quit the game before the finish. He became a member of a Sunday School class baseball team. How should he have been treated when he became angry and quit playing?

4. Should boys and girls play together? Under what conditions? At what ages? What kind of play?

5. Formulate a general program of play for girls in the seventh grade. State the principles that guide you in planning this program.

6. In general, high school athletics imitate college athletics. Is this a wise educational policy? Give reasons for your conclusions.

7. Is the fact that constant vigilance is necessary to keep interscholastic athletics clean an argument against this form of play? Give reasons for your answer.

8. Formulate a plan for using play as a motive in teaching geography.

9. Show how play could be used effectively in connection with teaching history in the eighth grade.

10. A certain child was frequently caught cheating in class and on the play ground. What should have been done about it?

11. A gang of boys, 10 or 12 years of age, dug a trench about six feet long, four feet deep and three feet wide in connection with playing war. Later after the boys had lost interest in it, the father of one of the boys had to make them fill up the trench. Which of the words "play," "work," "drudgery," should be used to describe digging the trench? Which ones should be used to describe filling it up?

12. Should a teacher make a sharp distinction between work and play in school? Give reasons for your conclusion.

13. Why and under what conditions should play be supervised?

IX

IMITATION AND SUGGESTION

Reading References

Allport, F. H.: Social Psychology, Chapter X.
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1. Imitation is the inborn ability to repeat more or less accurately the acts of another or of one's self.

(*a*) Imitation is not an instinct because it is not a definite inherited response to a definite stimulus.

(*b*) Imitative repetitions are usually very inaccurate, especially in the case of children. For example, it is only after much practice that students imitate accurately a teacher's pronunciation of the words in a foreign language. A boy learning to whistle, improves gradually through repeating his own more successful trials.

(*c*) There is no original tendency to repeat every act perceived. Exercise and effect and other factors determine what acts will be imitated at a given time. A person who is thirsty, seeing some one else drinking, may have a tendency to drink; but a mother, seeing some one mistreating her baby, has no tendency to mistreat the baby also.

(*d*) Imitation is usually directed by suggestion. This is especially true in cases in which the imitative act is performed with little attention, as standing up when a crowd rises.

2. Suggestion is an indefinite term that has been defined in many ways. It may be described as the process of responding to an external stimulus without the habitual or normal deliberation. For example, a person enters a store and sees a crowd buying soap at a bargain. Without hesitation, he immediately buys soap. Later he remembers that he really doesn't need the soap.

(*a*) A person is especially suggestible along the lines of activity that give expression to instincts or habits.

(*b*) A person is more suggestible when stimulated by friends than when stimulated by those he dislikes. Genuine friendship between teacher and pupils is one of the most potent factors in education.

(*c*) There is no such thing as contrary suggestion. Every stimulus has a tendency to produce some response. A command not to do a thing actually suggests doing the thing, and no other response is suggested. For example, if a child is told not to put a bean in his nose, the only act suggested is putting a bean in his nose.

3. Imitation and suggestion are closely related to the ideo-motor theory of action.

(*a*) Some psychologists believe that the idea of a movement tends to evoke the movement involved in the idea and would do so if there were no inhibition. For example, if there comes into consciousness the idea of putting one's finger in his eye, there is at once an incipient movement to perform the act and that the finger would actually be stuck in the eye if no inhibiting idea, such as the thought of the pain, came into consciousness. The facts do not support this theory.

(*b*) If the idea is of a movement which is satisfying, there is a tendency for it to call forth that movement or some other that will produce a similar satisfying effect for sensation. This latter movement may be wholly different from the one involved in the stimulating idea. For example, an advertisement in a drug store may call up the idea of eating ice cream, which in turn may evoke the movements involved in walking to a table, sitting down, and drinking a glass of lemonade.

(*c*) Idea of movements, like all other stimuli, tend to go over into response; but the exact nature of the response depends upon instincts, habits, and the condition of the individual at the particular time. The idea of eating pie would very likely evoke the pie-eating response on the part of a hungry boy, but if the boy had just eaten six or eight pieces of pie that idea would be more apt to evoke some other response.

4. Imitation and suggestion are of fundamental importance in education.

(*a*) Nearly all of the learning of infancy and early childhood is by means of imitation.

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(*b*) Not only children, but adults, can always learn more easily when shown how to do a thing than when merely told how to do it.

(*c*) Imitation through dramatization is an excellent means of self-expression. A boy playing the part of the hero in the story of John Smith and Pocahontas may learn very little history that is true, but he will have a much better development of his own ideas and feelings than would be possible if he simply read the story.

(*d*) The readiness with which children imitate makes it imperative that the social environment of the school be the best possible. The teacher should at least be physically, mentally, and spiritually normal. Feeble-minded children and those with serious physical defects that tend to make normal children morbid should be segregated, if at all practical. This is especially important in the lower grades.

5. Moral training is most effective when proper use is made of imitation and suggestion.

(*a*) Children are highly suggestible, and especially so, when influenced by one they admire and respect.

(*b*) Normally the parents are the child's first ideals of manhood and womanhood.

(*c*) Great characters of fiction and great men and women of history furnish an abundance of patterns for imitation. The Sunday School and other forms of religious education have the greatest wealth of inspiration in the Bible.

(*d*) Contemporary great men and women should also be presented sympathetically to the child as patterns to follow. Too often children come to believe that all the fore-fathers were great and that greatness died with them.

(*e*) High ideals are the surest foundation on which to build character through habit formation.

PROBLEMS

1. Name six things you do through imitation. Explain why you do each of them.

2. What method would you use in teaching a child to count?

3. In a certain school a new boy started the practice of pulling pickets off the school-yard fence. How could suggestion be used effectively in dealing with this situation?

4. Describe an effective use of imitation or suggestion in dealing with some group of children that you have observed.

5. Describe a case in which a negative command led to the doing of the thing prohibited. Show how the situation could have been dealt with effectively.

6. Illustrate how imitation may be used wisely in any three subjects taught in the sixth grade.

7. Should a school board employ a teacher who uses tobacco? Give the reasons for your answer.

8. In a certain school the members of the athletic teams were taught how to violate the rules without being detected. What do you think of this? Why?

9. Describe a case in which you learned to do some rather difficult thing through imitation.

10. In a certain school there was a boy who stammered. Several of the other children formed a habit of stammering through imitating him. How should the teacher have dealt with the situation?

11. In a certain town the hero of a large number of the boys is a rather worthless fellow who pitches for the local baseball team. What should be done, if anything, to counteract his influence?

12. In a certain school the girls developed a fad of imitating as much as possible motion-picture actresses. What should have been done about it?

13. What type of person is the best teacher for adolescent girls? For adolescent boys?

Teacher's Notes

X

ATTENTION AND INTEREST

Reading References

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1. Attention can be better understood by knowing some of the things it is not.

(*a*) Attention is not a power of the mind.

(*b*) Attention is not a faculty of the mind.

(*c*) Attention is not a something that an individual "gives" or "pays," or thrusts into consciousness or forces upon the mind.

2. Attention is a functioning of the mind. "Attention" and "consciousness" are but different terms applied to the same experience.

(*a*) Attention cannot be understood apart from the fact that the cortex of the cerebrum functions as a unit.

(*b*) At any given time some part of the cortex is stimulated more than other parts. This explains the fact that consciousness is always selective. For example, if one looks at a plain, white card he sees some part of it more clearly than the rest; or if one hears a wagon rattling down the street, he hears certain of the sounds more distinctly than the others.

(*c*) Attention is the term that expresses this fact that at a given time some things are clearer in consciousness than others, either on a sensory or ideational basis. Sights, sounds, odors, tastes, pain, memories, images, ideas, and so on may all be present in consciousness at a given time, but never all with exactly the same degree of clearness.

(*d*) The thing that is clearest in consciousness at a given time is said to be in the focus of attention. More exactly, it is the focus of consciousness.

3. Attention is of three types.

(*a*) Involuntary attention is an arrangement of the field of consciousness brought about by a stimulus so intense that it is the clearest in consciousness regardless of the desires or effort of the individual. For example, if the ceiling were to fall on my head it would gain the focus of attention regardless of whether I so willed it or not.

(*b*) Non-voluntary attention is an arrangement of the field of consciousness that involves no consciousness of effort or strain. It is illustrated by one's attentiveness to an interesting story, or by the condition of mind of a boy wholly engrossed in a game of ball.

(*c*) Voluntary attention is an arrangement of the field of consciousness that involves a consciousness of effort in maintaining it. For example, while a student is studying, the idea of stopping may become momentarily focal in consciousness. The idea of study may then regain neural supremacy and the work proceed until some other stimulus becomes stronger than study. This fluctuation in the field of consciousness is the determining characteristic of voluntary attention.

4. There is no such thing as inattention.

(*a*) So-called inattention means attention to some other than the things supposed to be in the focus of attention. The pupil most inattentive to the teacher may be highly attentive to planning a fishing trip at the very moment.

(*b*) Dispersed attention describes the condition of one's mind when drowsy or just before going to sleep. Nothing is very clear in consciousness, but so long as there is consciousness some things are clearer than others.

5. Interest is a term used with a variety of meanings.

(*a*) Interest may mean an attitude of mind or a mere liking. For example, one may have an interest in music or politics or sport.

(*b*) Interest may mean a share in a business or a property right. For example, one may have an interest in a bank.

(*c*) Interest as related to attention means a feeling of value for a thing or a feeling of satisfaction with a situation. One is interested in food when hungry and also interested in eating.

6. Interesting things are stronger stimuli than uninteresting things and therefore more easily hold the focus of attention.

(*a*) Any activity that is an expression of an instinct is interesting and therefore very readily becomes the focus of attention. A fight will always attract attention.

(*b*) Anything that satisfies a conscious need is interesting, and therefore gains the focus of attention with relative ease. A man in need of work is readily attentive to "help wanted" advertisements.

(*c*) Whatever fits in with one's habits is interesting and of high attention value. A rare stamp at once becomes focal in the mind of a stamp collector.

7. Without interest and attention there could be no education.

(*a*) Education must start with the interests of the child.

(*b*) Education must broaden the interests of the child in order to develop non-voluntary attention to tasks that are not naturally interesting. A boy who otherwise would quit, will struggle through high school mathematics if inspired by an interest in becoming an engineer.

(*c*) Education must take into account the fact that range and span of attention increase with age and adapt the work of the school to the ability of the pupil.

(*d*) Attention cannot be prolonged unless the physical conditions are favorable. Good health, sound bodies, comfortable seats, good air, light, and heat are all necessary for attentive work.

(*e*) Training in attention is essentially the process of forming habits of action and thought which arouse interests which will lead to prolonged non-voluntary attention to the useful activities of life. This training is a necessary part of the education of every successful man or woman.

PROBLEMS

1. Tabulate the definitions of attention you have found in your reading. How many types of definitions do you find? How do you explain these differences in definition?

2. Illustrate from your own experience the selective nature of attention.

3. Give an example of each of the three types of attention from your own experience in any half hour of study of your most uninteresting subject. Suggest a method whereby you can develop non-voluntary attention to this subject. Try it.

4. Plan an experiment to find out what effect conversation in the room or other distractions have upon the efficiency of your study.

5. Find out by experiment, if you can develop the habit of attention to your work when distracting noises are present.

6. Make a list of the interests of a ten-year old boy that could be used effectively in teaching arithmetic.

7. Name four interests of a fifteen-year old girl and show how they could be used effectively in teaching her history.

8. Gather data to find out the relative length of time six-year old children and twelve-year old children can be continuously attentive to a given thing. What bearing have these facts on the length of recitation periods for the two groups of children?

9. Plan a method whereby a pupil who writes poor English and dislikes composition work can be trained to work attentively at composition.

10. Compare yourself with three of your fellow-students as regards your habits of working attentively and effectively at disagreeable tasks. Plan and try an experiment to find out if you can improve in this respect. Record the results.

XI

THE LEARNING PROCESS: HABIT FORMATION

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1. All learning is a process of forming bonds in the nervous system.

(*a*) Some bonds are predominantly motor connections. For example, such bonds as those involved in learning to write, to play a piano, or to make bread.

(*b*) Some bonds are predominantly connections that involve ideas. For example, such bonds as those formed in learning history or geography or literature.

2. Habits are definite, acquired responses to definite stimuli.

(*a*) In structure and function habits are like instincts. They differ in that instincts are inherited and habits are acquired.

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(*b*) There are two kinds of habits: those of skill, and knowledge habits. It is important that the learner know the exact nature and function of a habit before trying to form it.

3. Habit formation increases efficiency.

(*a*) Physically, the habitual response is made with greater speed, accuracy, ease, endurance and certainty.

(*b*) Mentally, as a response becomes habitual it is made with less attention, greater feeling of satisfaction, with less fatigue, and with greater feeling of confidence.

4. Three factors necessary for habit formation are repetition, attentiveness, and satisfaction.

(*a*) Without repetition no habit can be formed. Exceptions or variations in repetition work against habit formation.

(*b*) To be most effective each repetition should be on a high level of attention. A clear understanding of the habit aids in holding it in the focus of attention. Repetition without understanding and attention is of little value.

(*c*) Repetition that is satisfying or pleasurable strengthens the bonds involved. Annoying or disagreeable repetitions weaken the bonds and therefore work against forming the habit. Pleasurableness increases interest and attention and therefore makes repetition more effective.

Teacher's Notes

5. A practice curve measures only part of the results of habit formation.

(*a*) Practice curves usually show only increase in speed and accuracy.

(*b*) They do not show changes in ease, endurance, certainty, or changes in the mental factors, attention, satisfaction, and confidence.

(*c*) Plateaus in the practice curve are probably apparent rather than real. If the increase in ease, endurance, and certainty were taken into account the curve would continue to rise. There is no reason to think that under similar conditions some repetitions make for improvement and others do not.

(*d*) If practice becomes highly annoying the practice curve may show a decrease in efficiency. "Going stale" in athletics illustrates this fact.

6. Drill is necessary for habit formation in school work.

(*a*) The physical conditions under which drill is carried on should be the best. The room should be comfortable and quiet.

(*b*) The learner should be in good physical and mental condition. He should be rested, alert, and interested.

(*c*) Drill periods should be short enough to make it possible to maintain high degree of interest and attention.

(*d*) There should be no variation in the performance of the habit in drilling on it. The habit may be used in a

Teacher's Notes

variety of situations, but always with exactness. For example, a child may be drilled on "5×7" in many situations, but it must always be "$5 \times 7 = 35$" never "$5 \times 7 = 36$."

7. There is no transfer of training.

(*a*) Habits are definite responses to definite stimuli. They are specific.

(*b*) A habit may function in many situations but the same neural bonds are active each time. Facts about George Washington may be learned in history and carried over and used in the study of literature, but the same bonds are used in both cases.

(*c*) Even moral habits do not transfer. A person may as a matter of habit be honest as regards money and yet steal a ride on a street car or a train or steal a grade in class.

(*d*) Training in forming some habits may interfere with the functioning of other habits. For example, the habits of investigation in chemistry may interfere with the study of sociology or history.

PROBLEMS

1. Make a list of habitual acts you perform frequently. Which are skill habits and which are knowledge habits?

2. Work out a plan for measuring the increase in efficiency due to habit formation in connection with learning psychology. Try the plan and record your results.

Teacher's Notes

3. Describe a case, within your own experience, in which you gained confidence through habit formation.

4. The story is told of a boy who habitually said "I have went." His teacher made him stay after school and write on the board "I have gone" five hundred times. The teacher was gone when he finished, so he wrote on the board the following: "Dear teacher, I have went home." What was wrong with the teacher's method? Suggest a method of correcting the boy's bad habit.

5. Frequently the last rehearsal of a play is a very inferior performance, yet the final presentation of considerable merit. How do you explain such cases?

6. Plan drill work for learning the multiplication combinations for children just learning them.

7. Work out in detail just what you would do in teaching children how to do subtraction.

8. A little girl five years old habitually sucks her left thumb and at the same time twirls a lock of her hair with her right thumb and fore-finger. Her mother has bandaged the thumbs, put quinine on them, and tried other devices for breaking the habit without success. Suggest a method of breaking the habit that would likely succeed.

9. Make a study of the habits involved in driving a Ford car and those involved in driving a car with the standard gear-shift. If a person learned to drive a Ford first, which habits thus acquired would be useful in learning to drive a "standard shift" car and which ones would not?

10. Work out a plan for doing your daily routine work whereby you would make the best use of your habits and eliminate waste by improving your habits of work.

XII

THE LEARNING PROCESS: PROBLEM SOLVING

Reading References

Averill, L. A.: Elements of Educational Psychology, Lesson 10.
Cameron, E. H.: Psychology and the School, Chapters VII, VIII.
Charters, W. W.: Methods of Teaching, Chapters XIX, XX.
Dewey, J.: How We Think, Part II.
Freeman, F. N.: How Children Learn, Chapter XI.
Gates, A. I.: Psychology for Students of Education, Chapter XIV.
Gordon, K.: Educational Psychology, Chapter XI.
McDougall, W.: Outline of Psychology, Chapters VIII, X.
Norsworthy, N. and M. T. Whitley: The Psychology of Childhood, Chapter X.
Parker, S. C.: Types of Elementary Teaching and Learning, Chapter X.
Pillsbury, W. B.: The Fundamentals of Psychology, Chapter XIII.
Pyle, W. H.: The Outlines of Educational Psychology, Chapter XV.
Woodworth, R. S.: Psychology, Chapters XVI, XVIII.

1. There are two general methods of solving problems, namely, (1) trial and error, and (2) reasoning.

(*a*) The trial and error method is frequently employed in solving mechanical puzzles. It is the method generally used in solving problems involving primarily sensori-motor activity. This is especially true in dealing with problems which demand activities the outcome of which cannot be foreseen. For example, if one should come to a fork in the road with no clue as to which fork to take, trial and error would be the method used in solving the problem.

(*b*) Reasoning is a method rarely used. It involves the process of using ideas to establish mentally between

elements in different situations relations that do not exist in fact. This is a process of abstraction and synthesis. In other words, it is a process of separating in thought things that cannot be separated in fact, and putting things together in thought that are not together in fact. For instance, one may in thought separate a cup and its water-holding qualities, then unite these qualities with a piece of folded paper and thereby be enabled to make a paper cup and get a drink.

2. There are two methods of procedure that characterize reasoning: (1) induction, (2) deduction.

(*a*) Induction is the process of finding a solution to a problem by observation and experiment. One could learn the operation of the gear-shift on different types of automobiles by experiment and observation.

(*b*) As applied to teaching, the five formal steps in the inductive method are: preparation, presentation, comparison, generalization, and application.

(*c*) Deduction is the method of finding a solution to a problem by using knowledge already gained. It is a process of referring a particular difficulty to some general principle already known. One might discover how to operate the gear-shift of an automobile by a careful examination of the parts of the transmission and an application of his mechanical knowledge gained in physics.

(*d*) The formal steps in the process of deduction are (1) consciousness of the problem, (2) attempts to discover the exact difficulty causing the problem, (3) attempt to

solve the problem through the process of association of ideas, (4) verification by trial of the suggested solution that appears to be the most likely to succeed.

(*e*) Induction and deduction are not two wholly distinct processes of reasoning. The solution of almost every problem involves the use of both.

5. Children have less ability to reason than adults.

(*a*) They have not had as much experience. Experience is the basis of reasoning.

(*b*) They do not use ideas as well as adults. Their consciousness embraces many images, but relatively few ideas or concepts. It is by the use of ideas and concepts that one carries on the process of establishing relations, which is necessary in reasoning.

6. Training in problem solving or practical reasoning consists in three things:

(*a*) In getting broader experience which is the basis of associations of ideas.

(*b*) In developing a critical attitude towards problems. This means an attitude that leads one to pause long enough before action to try to locate the difficulty and discover a solution through thinking rather than resorting at once to the method of trial and error.

(*c*) In perfecting a method of dealing with problems. This should include collecting adequate data, careful analysis of the situation in order to locate the difficulty, testing the suggested solutions in thought, in order to select the best one, before trying any one in action, verifying by application, the solution that offers the greatest probability of solving the problem.

Teacher's Notes

PROBLEMS

1. Describe in detail an example of deductive reasoning that you have done recently.

2. Show how the formal steps of deductive reasoning could be applied to learning how to shift the gears of an automobile.

3. Show how the formal steps of inductive reasoning could be applied to learning how to shift the gears of an automobile.

4. Describe some case of practical reasoning you have done recently and show that you used both the inductive and deductive method in the process.

5. The reason frequently given for requiring plane geometry for college entrance is that it develops the pupils' reasoning ability. In what ways does the study of geometry train the pupil in solving problems?

6. Work out a plan for training pupils to reason about social and political problems.

7. In what way can imagination be developed?

8. Describe an instance in which a child under ten years of age carried on a process of abstraction.

9. Show how training in reasoning in chemistry could be helpful in the study of history. How would such training function in the study of literature?

10. What kind of school training would you advise for a boy who wanted to be a stock broker? Why do you suggest these particular subjects?

Teacher's Notes

XIII

REMEMBERING AND FORGETTING

Reading References

Averill, L. A.: Elements of Educational Psychology, Lessons 14, 15.
Bennett, H. E.: Psychology and Self-development, Chapters XI, XII.
Cameron, E. H.: Psychology and the School, Chapter VI.
Gates, A. I.: Psychology for Students of Education, Chapter XII.
Gordon, K.: Educational Psychology, Chapter X.
Norsworthy, N. and M. T. Whitley: The Psychology of Childhood, Chapter VIII.
Pyle, W. H.: The Outlines of Educational Psychology, Chapter XIII.
Seashore, C. E.: Introduction to Psychology, Chapters XVIII, XIX.
Starch, D.: Educational Psychology, Chapter XI.
Thorndike, E. L.: Educational Psychology, Briefer Course, Chapter XVII.
Warren, H. C.: Elements of Human Psychology, Chapter VIII.
Woodworth, R. S.: Psychology, Chapters XIV, XV, XVI.

1. Memory or remembering is the process of reinstating past experience in consciousness. There are two kinds of memory.

(*a*) Conscious memory is the recall of a past experience with the additional consciousness that it is a past experience. Such a recall is relatively rich in imagery which makes it stand out as a definite experience that occurred in the past. For instance, one may recall with great exactness of detail his breakfast of this morning with the additional consciousness that he is recalling an event that actually took place at a definite time in the past.

Teacher's Notes

(*b*) Organic memory is the recall of past experience without this additional consciousness that it is a particular past experience. For example, one may recall the fact that nine times eight is seventy-two, but have no awareness of any particular past experience with $9 \times 8 = 72$.

(*c*) Remembering is a process of habit formation: a process of making definite connections in the nervous system. The first stage of this process involves conscious memory. When the habit is definitely fixed it becomes organic memory.

(*d*) The difference between "remembering" and "knowing" is essentially the difference between conscious and organic memory. One remembers the name of the stranger he met this morning, but he knows his own name.

(*e*) There is no faculty of memory, or memory ability; but there are many memories.

2. Memorizing is aided by the following factors:

(*a*) A clear understanding of the subject-matter. Meaningful material is always more readily recalled than meaningless material.

(*b*) Attentive repetitions. Memorizing is a process of habit formation, and attentive repetitions are necessary to habit formation.

(*c*) Making many associations. Recency, frequency, and mental "set" determine what will be remembered at any given time.

Teacher's Notes

(*d*) The use of many senses in the presentation of the material, but especially of the sense organ through which the particular individual learns most easily. Other sense impressions aid in building up associations.

(*e*) The use of rhythm aids in memorizing.

3. The ability to learn, retain, and recall improves with age.

(*a*) Adults have a greater span for immediate memory than children.

(*b*) Adults memorize more rapidly than children.

(*c*) Retention is about the same as regards the amount learned in children and adults. That is, in proportion to what is learned children and adults forget about the same amount.

(*d*) Adults are superior to children in memorizing because of better habits of learning and wider experience, which furnishes a better basis for association of ideas.

4. Girls surpass boys in memory work.

(*a*) Girls do better than boys in logical memory tests.

(*b*) Girls do better than boys in rote memory tests, using abstract words.

(*c*) Boys do about as well as girls in rote memory tests, using concrete words.

Teacher's Notes

(*d*) A possible explanation of the superiority of girls over boys is the fact that girls develop earlier than boys, physically. At the same biological ages girls do not show so much superiority over boys. Adult men and women show practically no sex difference in memory work.

5. In general, it is more economical to learn material as a whole rather than in parts.

(*a*) Verbal material should be learned by the whole method. That is, it should be memorized in units as large as can be read at one sitting with high attention.

(*b*) The first few repetitions should certainly be by the whole method.

(*c*) After the material is nearly learned, certain parts may present special difficulty. It is then economical to do extra drill on these parts to remove the difficulty.

(*d*) The final repetitions should be by the whole method.

(*e*) The whole method avoids making any false associations. This greatly increases the accuracy of recall.

(*f*) The length of the drill periods should be short enough to insure a high degree of attention throughout the period.

(*g*) Permanence of retention is increased by "over"-learning; but practice over several days is more effective than the same amount of practice in one day. Twenty hours of practice spread over two months would be more effective for permanent retention than if spread over a week.

6. **Forgetting is the process of weakening through disuse the bonds in the nervous system to the point where the given stimulus will no longer evoke the response connected with it in these bonds.**

   (*a*) Forgetting is useful in that it removes from consciousness ideas that are no longer needed. A child may forget how to say the rule for working certain arithmetic problems, but continue to be able to work the problems.

   (*b*) Forgetting is rapid immediately after learning and then slow. One forgets within an hour after learning more than half of all he will forget in days or even weeks.

   (*c*) Excessive forgetting is due to wrong methods of learning.

   (*d*) Whatever is learned on a basis of organic memory may persist throughout life. Those things that remain on a conscious memory basis are more easily forgotten. It is probably true that one never forgets what he knows, but only forgets what he remembers.

PROBLEMS

1. Select two pages of prose of as nearly equal difficulty as you can find. Divide one page into four sections and commit it to memory section by section, keeping a count of the number of repetitions for each section. Commit the other page to memory as a whole, counting the number of repetitions. Which is the more economical method?

2. Get some one to make for you a list of fifty unrelated words and a list of five sentences of ten words each. Commit each list to memory separately, counting the number of repetitions. Which was the more difficult? Why?

Teacher's Notes

3. In a certain geography class the pupils commit to memory the names of the countries and of their capitals. To many of them this is a very disagreeable task. Is this a good practice? Explain your answer.

4. A certain high school English teacher requires her students to memorize a great many poems. Many of the pupils dislike the course because of this requirement. Is the teacher justified in requiring so much memory work? Explain your answer.

5. Since girls are better at memorizing than boys, which should make the better grades in school? Gather data on this point.

6. Work out a method of study for high school pupils for committing to memory the important facts of American history.

7. If you were teaching the multiplication tables to a class of children how would you take into account the fact that some of them learn better through the eye, others through the ear, and others through motor activities.

9. Plan the drill work for the study of verbs in a foreign language for a high school class. Work out your plan in detail to cover at least two weeks.

10. A certain girl works very hard trying to learn history, but has great difficulty in doing so. Her quiz grades are always low because she cannot remember what she has studied. Her work in other subjects is satisfactory. What should she do to improve her work in history?

Teacher's Notes

XIV

INTELLIGENCE

Reading References

Book, W. F.: The Intelligence of High School Seniors, Chapters I, XV.
Cameron, E. H.: Psychology and the School, Chapter XIV.
Edman, I.: Human Traits and Their Social Significance, Chapter IX.
Gates, A. I.: Psychology for Students of Education, Chapter XVIII.
Griffith, C. R.: General Introduction to Psychology, Chapter XV.
Mateer, F.: The Unstable Child, Chapter III.
Norsworthy, N. and Whitley M. T.: The Psychology of Childhood, Chapters XV, XVI.
Seashore, C. E.: Introduction to Psychology, Chapter XXIV.
Terman, L. M.: The Measurement of Intelligence, Chapters III, V, VI.
Thorndike, E. L.: Educational Psychology, Briefer Course, Chapter VII.
Warren, H. C.: Elements of Human Psychology, Chapter XI.
Woodworth, R. S.: Psychology, Chapter XII.

1. Intelligence is a term that is used in a great many different ways. The outstanding characteristic of intelligence is the ability to profit by experience; that is, the ability to learn.

(*a*) Among the more common conceptions of intelligence are these: intelligence is the ability to comprehend a complex situation as a whole; intelligence is the power of independent, creative elaboration of new products out of the material given by memory and the senses; it is the ability to avoid errors and to surmount difficulties; intelligence is the general capacity of the individual consciously to adjust his thinking to new requirements; intelligence is a "common central factor" which participates in all kinds of mental activities.[1]

[1] See Terman: The Measurement of Intelligence, pp. 45–47.

Teacher's Notes

(*b*) According to Binet, intelligence involves three things, (1) a tendency to take and maintain a definite thought process; (2) the capacity to make adaptations for the purpose of attaining a desired end; and (3) the power of auto-criticism.

2. There are many grades of intelligence, each shading into another with no clear line of demarcation between them. A helpful classification based upon the Stanford Revision of the Binet scale, is as follows:

(*a*) Very superior intelligence; approximately only 5% of school children have this grade of intelligence.

(*b*) Superior intelligence; approximately 15% of school children have this grade of intelligence.

(*c*) Average intelligence; approximately 60% of school children have this grade of intelligence.

(*d*) Dull normal intelligence; approximately 15% of school children have this grade of intelligence.

(*e*) Very dull normal intelligence; approximately 5% of school children have this grade of intelligence. This is the lowest grade of normal intelligence.

(*f*) Morons (high, middle, and low); intelligence of grades that in adult life reaches levels ranging between normal seven-year and eleven-year intelligence. This is the highest grade of feeble-mindedness.

(*g*) Imbeciles (high, middle, and low); intelligence of grades that in adult life range between normal three-year and seven-year intelligence.

(*h*) Idiots (high, middle, and low); intelligence of a grade that in adult life range below normal three-year intelligence.

Teacher's Notes

3. The most satisfactory method for the determination of general intelligence is to measure it in terms of mental age.

(*a*) Mental age is a statement of the general mental ability of an individual at a given time, as compared with the mental ability of normal children of different ages. The basis of comparison is a scale made up of tests graded by years, so selected that normal children of a given age will score a mental age equal to their chronological age. For example, normal ten-year-old children will score 10 as their mental age. This is called the "M. A."

(*b*) If a child's mental age is less than his chronological age, he is mentally inferior. If his "M. A." is greater than his chronological age, he is above the average in mental ability.

(*c*) The Intelligence Quotient, or "I. Q.," is the ratio of the mental to the chronological age, or "C. A.", of an individual. M. A. ÷ C. A. = I. Q. For example if a child is six years old his "C. A." is 6. If when tested he makes a mental score of six years, his M. A. is 6. Then M. A. 6 ÷ C. A. 6 = 1.00. This "1.00" is his I. Q.

(*d*) An I. Q. less than 1.00 indicates that the individual is mentally below the average: if his I. Q. is more than 1.00, it indicates that he is mentally above the average.

(*e*) The I. Q. remains relatively constant. As a consequence, it can be used to predict the rate of mental development of the child.

Teacher's Notes

4. Intelligence is inherited; it is not acquired.

(*a*) Accident or disease may impair native intelligence, but it is affected very little or none by training.

(*b*) The basis of intelligence is the structure and functioning of the nervous system. Intelligence is, therefore, fundamentally an inherited trait.

5. There are certain factors of general intelligence that are not accurately measured by general intelligence tests.

(*a*) The emotional qualities of behavior are certainly mental and a factor in general intelligence, but general intelligence tests do not measure emotions except indirectly. For example, a highly emotional child, working under test conditions may make a much lower score than a child who is calm and self-possessed. The difference in score may be due to the emotional differences in the children, but the records in the test do not show this factor.

(*b*) Tact and the ability of working with people are factors in intelligence, but they are not measured by the tests.

(*c*) Moral qualities, such as honesty and dependability, which certainly are important factors in intelligence, are not measured by general intelligence tests.

6. Sound educational practice will take into full account all the important facts that grow out of the study of general intelligence.

(*a*) Education should give full recognition to individual differences. The most important individual differences are differences in intelligence.

(*b*) Education must take into account the fact that intelligence is uneven. In some abilities a ten-year old child may be at a seven-year level and in others he may be at a twelve-year level. This is especially true of the feeble-minded child.

(*c*) School achievement depends upon general intelligence. The I. Q. is the best index of the probable outcome of a child's educational career.

(*d*) Vocational success depends largely upon general intelligence. Adequate vocational guidance must take into account the intelligence of the pupil.

(*e*) General intelligence is the determining factor in making moral and social adjustments. Education along these lines should be founded upon this fact.

PROBLEMS

1. A certain girl, thirteen years old, has been in the first grade for three years without making progress. An intelligence test reveals the fact that her I. Q. is 50. What should be done with this girl?

2. A boy, sixteen years old, is a freshman in high school. He failed in all his work the first semester. His I. Q. is 88. What should be done in his case?

3. A pupil who is 10 years and 8 months of age has an M. A. of 11 years and 9 months. What is his I. Q.? What will be his mental age when he is twelve years old?

4. A girl fourteen years old is in the fourth grade. She is one of the poorest pupils in the grade. What do you advise doing in this case?

Teacher's Notes

5. A fourteen-year old boy with an I. Q. of 110 has failed in English and algebra in his first year in high school. He is untruthful, sullen, and disobedient. What do you advise doing in his case?

6. A girl, sixteen years old, who is a freshman in high school, wants to be a teacher. Her I. Q. is 90. What would you advise her to do?

7. Should children with the same I. Q. be put in the same group in school work? Or would you use the M. A. as a basis of grouping?

8. Should separate classes be made for dull children and bright children? Give reasons for your answer.

9. From the point of view of general social welfare, are there some types of work that can be done more efficiently by people of low grade intelligence than by those of superior intelligence? If so, what are they? What factors do you take into account in reaching your conclusion?

Teacher's Notes

XV

TESTS AND MEASUREMENTS

Reading References

Averill, L. A.: Elements of Educational Psychology, Appendix.
Cameron, E. H.: Psychology and the School, Chapter XIV and Appendix.
Dickson, V. E.: Mental Tests and the Classroom Teacher, Chapters III, XI, XIII.
Gates, A. I.: Psychology for Students of Education, Chapter XIX.
Grant, J. A.: Acquiring Skill in Teaching, Chapter XIII.
Griffitts, C. H.: Fundamentals of Vocational Psychology, Chapters I, II.
McCall, W. A.: How to Measure in Education, Part I.
Monroe, W. S., J. C. DeVoss, and F. J. Kelley: Educational Tests and Measurements.
Norsworthy, N. and M. T. Whitley: The Psychology of Childhood, Chapter XVII.
Pyle, W. H.: The Outlines of Educational Psychology, Chapter XVII.
Rugg, H. O.: Statistical Methods Applied to Education, Chapter I.
Starch, D.: Educational Psychology, Chapter XXII.
Terman, L. M.: The Measurement of Intelligence, Chapters VII, VIII.
Wilson, H. B., G. C. Kyte, and H. G. Lull: Modern Methods in Teaching, Chapter XIX.

1. Standard tests and measurements have been developed to meet the need for scientific accuracy in place of mere opinion in evaluating school work.

(*a*) Studies of the accuracy of teachers' marks as measures of achievement reveal their great unreliability.

(*b*) Standard tests are the basis of knowledge as to the relative value of work in different schools.

(*c*) Tests and measurements also reveal individual differences and are therefore valuable in the diagnosis of cases of failure.

Teacher's Notes

2. There are four general types of tests that are valuable in education:

(*a*) Physical tests to determine the physical condition of the child.

(*b*) Psychological tests that measure special mental functions such as memory, association, attention, imagination.

(*c*) General intelligence tests to measure the general mental ability of the child apart from school training. There are two types of these tests: (1) individual tests and (2) group tests.

(*d*) Instruction tests to measure achievement in the particular school subjects, as arithmetic, spelling, reading, geography.

3. The physical examination of children should be a part of the routine of every school system.

(*a*) The sense organs, especially the eyes and ears, should be examined, and defects reported to the parents.

(*b*) The lung capacity of every child should be measured and the vital index (the relation of lung capacity to weight) determined.

(*c*) A general physical examination by a physician should be given every child, with special reference to the condition of the heart, lungs, and tonsils.

4. The tests of specific mental functions are of special value in dealing with abnormal children.

(*a*) They are of no great significance in connection with regular school work.

(*b*) In cases of failure, backwardness, or delinquency, careful use of these tests of memory, association, and other mental functions is valuable.

5. General intelligence tests are of value in all grades of school work.

(*a*) They furnish the best basis for classification of pupils.

(*b*) They are essential to scientific diagnosis of individual cases that are causing trouble.

(*c*) They are valuable as basis of prediction of the future progress of the pupil.

(*d*) They are indispensable to scientific vocational guidance.

(*e*) In measuring the relative teaching efficiency of a school system by the use of standard instruction tests the results are unreliable unless supplemented by the use of general intelligence tests.

6. Instruction tests and scales should be used regularly in every school.

(*a*) They are the most reliable source of knowledge as regards progress and achievement in classroom instruction.

Teacher's Notes

(*b*) When used in connection with general intelligence tests they are the best basis on which to rate the teaching ability of a teacher.

(*c*) Such tests must be used with great caution, for they measure progress only in the thing which is being tested. They throw no light on the value of the subject-matter.

7. Tests and measurements are of little value unless they are properly used.

(*a*) The results must be thoroughly understood.

(*b*) There is a dangerous tendency to over-estimate the value of any school subject, the teaching of which can be accurately measured.

(*c*) The results of tests must be properly organized by the use of statistical methods, whenever applicable.

(*d*) School practice must be modified in the light of the facts revealed by the use of tests and measurements or there is no reason for using them.

PROBLEMS

1. Examination revealed the fact that a little eight-year-old girl is near-sighted and therefore needs eye-glasses very badly. Her parents object to having her wear glasses because of her youth. What should be done about this case?

2. A boy who is now repeating the third grade has infected tonsils and adenoids. His parents do not "believe in operations." What should be done in this case?

3. What is the difference between a test and a scale?

4. What are the characteristics of a good test?

5. There are three ward schools in a certain town. The children in one of these schools made considerably higher grades in arithmetic than in the other two schools. How would you undertake to find the reason for this?

6. Get the height and weight of each member of the class in educational psychology. Make a table of frequency and a surface of frequency for each trait.

7. Is there correlation between the height and weight of the members of the class? Compute the coefficient of correlation by the method of differences in relative ranks.

8. What is the average height of the class? What is the median weight?

9. A certain teacher has a feeling that the children she is teaching are unusually poor readers. What would you advise her to do to find out the actual reading ability of the pupils?

XVI

PERSONALITY AND CHARACTER

Reading References

Averill, L. A.: Elements of Educational Psychology, Lesson 17.
Bennett, H. E.: Psychology and Self-development, Chapter XVII.
Dewey, J.: Democracy and Education, Chapter IV.
Edman, I.: Human Traits and Their Social Significance, Chapter XV.
LaRue, D. W.: Psychology for Teachers, Chapter XVI.
McMurry, F. M.: How to Study, Chapter X.
Mateer, F.: The Unstable Child, Chapter XVII.
Miller, H. C.: The New Psychology for Teachers, Chapter III.
Pyle, W. H.: The Outlines of Educational Psychology, Chapter XII.
Terman, L. M.: The Hygiene of the School Child, Chapters XVI, XVII.
Warren, H. C.: Elements of Human Psychology, Chapter XVI.
Woodworth, R. S.: Psychology, Chapter XXI.

1. Education is something more than merely learning of school subjects.

(*a*) Education affects the whole person.

(*b*) It is the process of growing a personality and character.

2. Personality and character are terms used to describe different aspects of an individual. They both refer to the completeness and unity of the self.

(*a*) Personality is intangible and indefinable; but, nevertheless, it is very real. It refers especially to the affective tone of other peoples' judgments of a person. For example, one's personality may be described either as pleasing or disagreeable; as strong or weak; as winning or repellent.

(*b*) Character refers to the moral qualities of a person. One may have a good character, yet be disagreeable in personality.

3. Many factors enter into the building of a personality. Some important ones are:

(*a*) One's general attitude. Self-reliant, stubborn, aggressive, cheerful, morose, considerate, are a few of the characteristic types of attitudes.

(*b*) Emotional factors. To illustrate one may be excitable or calm; quick-tempered or slow to anger.

(*c*) Physical factors. Good health makes for a pleasing personality; ill health works against it. Small stature predisposes one to be aggressive; large stature predisposes one to be easy-going.

(*d*) Intelligence. Other things being equal, the greater one's intelligence, the higher the quality of personality he may develop.

4. Character is the sum total of one's habits of thought and action.

(*a*) Habits of thought determine one's ideals and purposes. These are the motives of action.

(*b*) Morality is essentially a matter of habit formation.

(*c*) From the viewpoint of morality, right action is more important than right ideas about conduct.

5. Moral training, the purpose of which is to develop good character and personality, should be in accord with the following facts:

(*a*) Morality is the outcome of habit formation.

(*b*) Habits are specific.

(*c*) General principles of conduct are not sufficient. They must be supplemented by the building up of a large number of definite and sure responses to a large number of situations.

(*d*) Ideals, purposes, attitudes, emotional behavior, and the other factors that affect character and personality may all be improved through habit formation.

(*e*) The habits that affect personality and character are more important in education than those which are formed in learning subject-matter in the classroom.

(*f*) A person with a well-developed personality and character is one who habitually acts in accord with high ethical ideals.

PROBLEMS

1. Make a list of six traits which you think are necessary in a well-developed personality. Write the names of the five students with whom you are most intimately acquainted. Now rank these five students from highest to lowest (1, 2, 3, 4, 5) as regards each of the six traits. Using the five as a scale, rate yourself in these six traits.
2. Explain the relation of religious belief to moral conduct.
3. A certain girl entered college with a good record as a student in the high school. Within a week she became discontented and gave up altogether the purpose of going to college.

This was a bitter disappointment to her parents. Every possible appeal was made to the girl but she quit without trying to do the work. Wherein was her high school education at fault?

4. A certain fifteen-year-old boy does well in class work, is physically normal; but is a thief. What should be done with this boy?

5. A certain girl, sixteen years of age, is an excellent student, attractive in appearance, and possesses many other good qualities, but she is unpopular because her fellow-students think she is conceited. What should be done for this girl?

6. Work out in detail a plan for developing character and personality in connection with teaching some one subject in the eighth grade.

Teacher's Notes

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